THE VETERINARY RECORD

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THE NATIONAL VETERINARY ASSOCIATION.

The arrangements for next year's annual general meeting at Plymouth are now well on their way. A provisional committee has been elected, and held its first meeting. Mr. Elder is the chairman, and Mr. Bond the secretary. With these gentlemen, and Mr. Bloye as President to assist, the success of the meeting is more than half assured. The local practitioners have also taken the matter up in earnest, and are keen to show that the West of England has suffered too long from neglect. We hear on good authority that forty new members of the National Association have been secured. Devon and Cornwall are preparing to show that the western men shall not be left behind.

It is decided that the meeting at Plymouth shall be at least a two days meeting, if not three or more. So confident are the committee that the natural attractions of the district will induce many practitioners to make a holiday stay that they have provided two solid days of work. The subjects for debate are "Milk Fever," "Spavin," "Tuberculosis," and "Non-Contagious Skin Disease." This programme will not be exhausted in less than two full days. After which it is probable some one or more excursions will be organised. The meeting will take place in August, and members at a distance are advised not to bind themselves for any counter-attractions until the date of the Plymouth meeting is fixed.

SHORT "CLINICALS."

Last week a correspondent suggested that we should have a special column for short notes on clinical cases—a column for such brief reports as might be recorded on a post-card. We do not think a special column is needed, we welcome all contributions of the kind whether sent on post-cards or otherwise.

Hard working practitioners have little time to spare for elaborate articles, but few could not send something of interest to the general reader on a post-card. The suggestion is a good one; for, after all, it is the facts of a case that are most important, and any of our readers who do not care to elaborate dubious theories may escape all danger by confining themselves to a short concise account of the many interesting cases they meet with.

ECTASIA.

By E. P. EDWARDS, M.R.C.V.S.

Under this title Möller describes dilatation of the skin and of the muscular and mucous coats of the œsophagus, and I beg to record the following case, partly because of its rarity and because of a peculiarity in form which led to my mistaken diagnosis.

Asked casually to look at a well-bred hackney filly, about eight months old, I found, about the middle of the neck on the near side and in the track of the œsophagus, a swelling the size of a cricket ball, painless on manipulation and giving the impression of being a fibro-pustular cyst of old standing.

It was quite loose in its surroundings, easily moved up and down, and apparently having no root or attachments. The owner said he had noticed a swelling about a fortnight after the foal's birth, and its present size was attained at four months old. I gave a stimulating liniment, and happening to be at the farm again a fortnight later, examined the swelling to find it much the same but for the tenderness induced by the liniment.

Convinced there was pus within I proceeded to open it, which I did by snipping the skin with a rowelling scissors, and whilst pressing the tumour out introducing a small pocket lancet. This gave exit to a quantity of oily, slightly yellowish, but laudable pus, and to some curious bean-shaped masses of inspissated pus.

The foal had been eating grass, and when twitched for the operation stopped chewing, but now whilst I was washing and squeezing over the region of the wounds he gave a gulp and, to my anything but pleased surprise, out came through the operative wound grass coloured saliva. I rendered the wound as aseptic as possible and had the foal removed to my stables, when on a further examination it was found that the walls of the cyst consisted of a dilatation of the muscular and mucous coats of the œsophagus.

Fortunately the dilatation had taken a spindle form, that is, the body of the pus containing cyst was continued in the form of a tube about 3 inches long to the point of its attachment to the œsophagus, which point therefore was considerably higher up the neck than the level of the swelling on it, when observed clinically. This explained the movability of the swelling and its apparent freedom from its surroundings, and condones my mistake in diagnosis.

Treatment.—The opening in the skin was enlarged in the long axis of the neck until, with upward traction on the skin by an assistant, the track of the spindle tube was found and carefully dissected close

to its entrance to the œsophagus. A pair of curved blunt pointed scissors were then passed around its neck, and the tube snipped within an inch of the œsophagus, when the dilated coats appeared to contract towards the œsophageal opening on that side of the division. The wound was then thoroughly asepticised, no stitches put in the œsophagus, interrupted sutures in the skin, and the whole bandaged by means of a towel soaked in creolin solution. All solid food was withdrawn, and for eight days the animal lived on milk, eggs, flour, sugar, and olive oil, the quantities calculated proportionately from her weight as far as possible to sustain life. It was remarkable how little the animal lost flesh under this diet.

She drank eagerly, but for the first three days I despaired of any good result, for except when pressure by a wet compress was applied, most of the fluid gushed out at the point of fistula. On the fourth day this symptom was less marked, and gradually granulations formed, quite closing the fistulous channel, so that on the 14th the patient was sent home with orders to be fed on mashes and other slops. In another three weeks there was little but a round bunch of granulations to be seen, but these refused to contract and grew to a mushroom-like tumour some inches in diameter, and with a fibrous neck. This I removed with actual cautery, and the case then passed out of my ken.

This was in 1893, and the foal had changed hands, but I saw her again a week ago when I was told she had never had any trouble, and an examination failed to detect any thickening or sign of œsophageal stricture.

It appears as though this condition must have been congenital, or if not to have been established very soon after birth, whilst its cause is a matter of conjecture as there was no history of injury, and the swelling was noticed before the foal had grazed at all.

LAME IN HARNESS ONLY.

By T. J. Wooff, M.R.C.V.S.

One Saturday I examined a newly purchased waggon horse for a client. I passed it "sound." On Monday it was tried in harness and had not proceeded far with a light load before it became excessively lame on the off fore limb. The driver stopped the horse, examined the foot but found nothing. On starting again the lameness was less, but a very little distance was covered before the lameness was again so great that he was obliged to return to the stable in easy stages.

In answer to a call I attended and found the horse standing in the stable showing no sign of pain. It was led out and walked round the yard, then it was trotted for some minutes, but its action was as true and level as possible. The driver seemed surprised, and suggested a trial in harness in a sort of self-defensive tone. It was put into harness and started out of the yard along a level road with a load, including the van, of a little more than a ton. For first hundred yards it went gaily and well, but had not gone three times that distance before lameness was well marked. The peculiarity of the action suggested shoulder lameness, as it seemed difficult for the horse to bring his leg forward. After standing a few minutes the horse was moved on again, but the lameness though less was still noticeable and increased with progression. Half suspecting embolism I felt both limbs, but there was no difference in their temperature, neither was there any sign of the paralytic condition which accompanies embolic lameness.

On returning to the yard the horse was taken out of harness and trotted up and down. Not content with one run, I had two men to relieve each other and keep him trotting, but not a sign of lameness was evinced. Unfortunately we had not a breast-plate available so could not try him in harness without a collar.

The most careful examination of the neck, shoulders, withers, legs, and ribs was made by myself and another veterinary surgeon but nothing abnormal could be detected. As the horse was purchased subject to a week's trial the owner decided to send him back to the vendor so I was unable to see what time would effect.

I conclude that the collar had some part in the production of lameness, but I am unable to even guess at the deeper cause of such a marked but transient condition.

VETERINARY SOCIETIES.

LINCOLNSHIRE VETERINARY MEDICAL ASSOCIATION.

The autumn meeting was held at the Albion Hotel, Lincoln, on Thursday, September 29th, when the following gentlemen, amongst others, were present: Messrs. T. Holmes, President, Bourne; H. Howse, vice-president, C. Hartley, Lincoln; C. E. Norgate, Retford; F. H. Reeks, E. Wightman Bell, Spalding; T. W. Turner, Sleaford; C. Seely, Lincoln: and T. Smith, Market Rasen.

The President read a letter from Mr. E. C. Russell, of Grantham, the secretary and treasurer, who was prevented through illness from being present, and the meeting expressed their sympathy with Mr. Russell. Letters and telegrams were also read from other members whose professional duties prevented them from leaving home.

A letter was also read from Mr. A. L. Wilson, of Horncastle, resigning his membership of the Association in consequence of his leaving the country.

On the motion of Mr. Hartley, the resignation was received with regret, and a strong hope expressed that Mr. Wilson would meet with marked success in his new home.

The minutes of the last meeting, held at Peterboro' in June were, on the motion of the President, taken as read.

The International Congress at Baden-Baden.

A circular from the Board of Agriculture, enclosing a letter from Dr. Lydtin calling attention to the seventh congress of International Congress of Veterinary Sur-

geons to be held at Baden-Baden in 1899, and inviting members to join and attend. Resolved to acknowledge the receipt of the circular and to lay the letter on the table.

THE TREATMENT OF WOUNDS.

By H. C. REEKS, M.R.C.V.S., Spalding.

Mr. REEKS said he was aware that it was a subject that was decidedly difficult to treat in anything like an original manner, but still it was a subject that would afford plenty of ground for reflection. No doubt some of the members would be tempted to say that they knew all that could be said on the matter, and he did not pretend that he was going to put anything new before them, but what he wanted to do was to group together a few remarks, a few extracts and just so little of his own experience as would stimulate the members to carefully combine the theoretical side of the subject, with that which was pre-eminently practical and mechanical.

The mechanical treatment he would dispose of first. By mechanical treatment he understood the methods used of maintaining the lips of the wounds in apposition, the resting of the limb or affected part by placing in splints, or slinging the animal, the use of drainage tubes, the proper application of a suitable dressing, and finally the careful adjustment of plasters, or where possible bandages. He purposely used the word mechanical, because, unless a man be almost a born mechanic or else be a trained one it was impossible for him to succeed in giving that skilful adjustment and attention, which means more comfort to his patient and a consequent successful issue to the case. He could not attempt to describe the various sutures, suture materials, needles, etc., with their own special advantages and disadvantages, for that would constitute a paper in itself. Suffice it to say, the choice they had to-day of materials and appparatus, left little to wish for. For his own part, he had found that for all general purposes, in the larger animals at any rate, the well known pin and figure-of-eight sutures was far and away the most serviceable. In cases of abdominal laceration with protrusion of the bowel or other internal organs, or in any case where the sutures cannot afterwards be removed, he would prefer to use the absorbable carbolised silk or gut. In the smaller animals these two materials in their varying sizes would be found all sufficient for any case. If, unfortunately, the stomach or intestine itself, or any of the hollow organs be wounded then Lembert's suture would be found most beneficial. The "suture instrument" of the late Captain Russell, of Grantham, was most useful for the purpose, the only objectionable item being its price. In cases of wounds on the quarters or in other positions where the skin is tremendously thick, the difficulty might be got over by using extra large and thick bayonet-pointed pins, fastened in a figure of eight manner. But still, the material to be used the methods of suture and the means of keeping them in position must be left to the surgeon's own individual discretion, for the old saw, "What is one man's meat is another's poison" applies with as great a force in this case as in any other. What one man will use with all possible success, will, in the hands of another, result only in disastrous failure. But the mechanical treatment of wounds deserved as much consideration at their hands as did the theoretical, and the surgeon to-day was as well supplied with materials and apparatus as he could wish to be.

The Theoretical Treatment.—By the theoretical treatment he referred to that treatment which was dependent on and deduced from: 1st. The knowledge we possess concerning inflammation and its various sequels. 2nd. What of late years has been learned of bacteriology, and the different modes of entrance and action of bacteria on the wounded surfaces. 3rd. What we know of the actions and modes of action of the various antiseptics now in use, which aid us in assisting the body tissues in the slaughter of invading bacteria, or rather in placing the wounded part in such a state of antisepsis that bacteria cannot gain entrance.

Inflammation.—This must necessarily exist in all wounds in a greater or less degree, and its presence or absence will be tremendously indicative of the truth or falsity of the treatment we are adopting. Inflammation may be defined as the succession of changes taking place in a living tissue when it is injured, providing the injury is not of such a degree as to at once destroy its structure and vitality. The phenomena of inflammation may be divided under two headings:—(*a*) Vascular changes; (*b*) textural changes.

Vascular changes. Almost directly on the application of the irritant—which irritant may be exposure to the air of sensitive cells, the presence of multiplying germs in the part, chemical substances, or dead tissue elements brought about by a wound—the blood vessels of the part slowly become distinctly widened or dilated, reaching sometimes even twice their normal calibre. This dilation commences primarily in the arteries, progressing afterwards to the veins and capillaries, and usually requires from fifteen minutes to two hours before the change is complete. Accompanying this dilatation of the blood vessels there is an acceleration of the blood current through them, most evident in the arteries, but also evident in the veins and capillaries. Sooner or later, however, this quickening of the blood current begins to fail, becoming slower and slower until it falls below the normal, and in severe cases actual stasis or stoppage may occur in the vessels of the inflamed area. As a result of this decreased rapidity of the blood flow the white corpuscles begin to collect in large numbers in the peripheral parts of the stream, and are arranged together in little heaps or masses. This peripheral aggregation of leucocytes is noticed both in the veins and the smaller arteries, but primarily and to a far greater extent in the veins. As the marginal distribution of the leucocytes increases further changes may be noticed, namely, those corpuscles which are nearest to the vessels will become closely applied to it, send out small prolongations of their protoplasm through it, which prolongations or pseudopodiæ the rest of the cell body soon follows and the leucocyte has taken up an extra-vascular position. Following this migration of leucocytes the red corpuscles may, and often do, become extravasated in large numbers. In cases of severe inflammation there is also an escape, more or less, of liquid from the vessels in the inflamed area, known as the inflammatory exudate, coming as it does from the blood plasm, contains the elements for the formation of fibrin. What brings about this mignation of leucocytes? Does it serve any beneficent object? Are we to look upon it as a mere mechanical filtration through the vessel wall under pressure, or may the leucocytes have reasons of their own for migrating? It has been shown that these leucocytes are extremely sensitive towards certain substances in solution. Some of these substances attract and draw the leucocytes towards them, exciting what is known as a "positive chemotaxis," and it is supposed that in all inflammations in which there is abundant migration of the leucocytes that there is something attracting the leucocytes towards it. This something may be bacteria or their products, dead tissue elements, or the substances they give rise to when they degenerate. One of the best examples of bacterium exciting this positive chemotaxis is in the disease known as anthrax or in an ordinary case of suppuration. That the leucocytes are flocking in their thousands to the seat of the inoculation is well seen in anthrax by the swollen, livid, and inflammatory condition of the tissue around the wound, and they may be seen in millions in a small

drop of pus spread on a slide and stained, appearing to form the greater bulk of the pus itself.

Does the migration serve any beneficent object? These leucocytes play a part in the regulation of the body's general well-being, almost identical with that of scavenger in our large towns, that of preserving the health of the general community. They are sent out with the express purpose of taking and destroying any filth deposited inside the body—by filth, all foreign substances (bacterial or otherwise) that excited the positive chemotaxis. It was by this agency that the course of a fearsome disease, such as anthrax, is stayed and sometimes checked altogether, and whether engaged in the slaughter of the bacilli of some fearsome disease or busy with the removal of some simple dead tissue element, the beautifully beneficent purpose of their movement is splendidly demonstrated.

Textural Changes.—Inflammation, whenever occuring, is always injurious to the part itself, although this does not prevent that same inflammation from being beneficial to the organism or animal as a whole. The injury consists in the normal function being interfered with, its action being weakened or in some cases the inflamed area entirely destroyed. Later there is an increased germinal activity manifested by some of the cells, particularly connective tissue cells. This occurs probably after the removal of the exciting cause of the inflammation, or it may be during its presence if far removed. This germinal activity after inflammation—or in its later stages—results not only in the formation of connective tissue, but also the restoration of epithelium, endothelium, blood vessels or muscular tissue. Following these changes in the blood vessels and tissues there occurs, after the irritant is removed, what is known as the retrogressive phenomena of inflammation. These consist in the removal of liquid and solid materials of the exudate, the removal of dead tissue elements in the inflamed area, and finally the regenerative growth to replace textural elements destroyed by the inflammation. All the liquid portion of the inflammatory exudate is carried away by the lymphatics and veins, and the solid portions—dead bacteria, dead red corpuscles, dead tissue elements, coagulated fibrin, etc.—removed by the agency of the phagocyte cells or leucocytes. After this removal the surviving cells set about the renewal of their kind, and the part is brought again into a near approach to its former state.

Inflammation is now generally, if not universally looked upon, as the only protection that animals have against the innumerable outside organismal invasions. Dr. Treves, F.R.C.S., Lecturer on Surgery at the London Hospital, in a lecture on peritonitis says: "Inflammation was represented in the literature of the past as the great enemy of mankind, and even in the popular science of the present day it retains no little of its satanic disposition. Now as the human body is an excellent medium for the cultivation of bacteria, the micro-organisms begin forthwith to settle down and multiply. Under the ægis of this inflammation the cells of the body rise in their millions against the invaders, and there takes place at the point of the outbreak a battle which (if Metchnikoff and others are to be believed) is without a parallel in the very deadliest warfare imagined by mankind. It is by the inflammatory process that the poison is destroyed and the growth of the parasite arrested. But for inflammation, a man who is accidentally inoculated with a septic micro-organism becomes at once little more than a test tube, prepared for the favourable development and culture of the particular coccus or bacterium. In malignant pustule can well be seen the desperate struggle which takes place between the invading bacteria and the surrounding and active cells of the body. This conflict is a representation of the inflammatory process and the beneficent purpose is splendidly obvious. But for this inflammation, a human being may be regarded as an organism not far raised above the level of a peculiarly-shaped mass of agar-agar."

With regard to bacteriology, Mr. Reeks said the subject was well nigh inexhaustible, but a few facts connected therewith would greatly guide us in our treatment of an exposed animal tissue, for example:

(*a*) The tendency some organisms have of remaining near the point of inoculation and killing the animal only by the ptomaines they produce as in tetanus.

(*b*) The comparative ease with which another organism will spread from the point of entrance and invade the whole body as in anthrax.

(*c*) The different resisting powers of the invading organism against antiseptics, and the antagonistic guardian cells of the body.

(*d*) The fact of the invading organism being.

(*e*) The various incubative periods of the disease to which they give rise.

(*f*) The temperature most suitable for the growth of the organism, and the temperature at which it dies.

(*g*) The resistancy of their species to various outside cirumstances, and positions in which the organism will sporulate, and in which it will not.

(*h*) The mode of entrance favoured by a particular organism.

These and various other facts bacteriology had given for our guidance in the treatment of wounds, and last but not least, there was the "germ theory of putrefaction" but why it was called a theory and not a fact it was impossible to understand.

Antiseptics. The use of antiseptics without a proper knowledge of the "germ theory of putrefaction" was worse than useless, it is the only scientific ground they had and it deserved the fullest consideration. Although wounds have been treated from the earliest times with some form or other of antiseptics, it is only quite within recent times that the "germ theory" (first established as a scientific fact by Pasteur) has revolutionised and perfected our application of germicidal agents. The speaker was aware that this germ causation was looked down upon by a few practitioners with a condescending air, but the more the subject was studied the more scientific and useful men they would become.

To show the value of antiseptics properly applied, Mr. Reeks gave the results of some experiments made by Messrs. Messner, Hermann, and Gœrtner, which appeared in *The Journal of Comparative Pathology and Therapeutics*, September, 1894. These experiments were made to prove: 1st, whether, with the assistance of a 3 per cent. carbolic acid solution, we could disinfect infected wounds, and whether by such means we could cut short or modify the course of suppuration in cases that would take on a progressive phlegmonous character if not treated by antiseptics. 2nd. Whether or no a 3 per cent. carbolic acid solution depresses the vital energy of the tissues and predisposes to suppuration. All the experiments were made on rabbits. A great number of rabbits were taken in pairs and a wound made in the thigh of each. This wound was infected for a number of hours (up to eighteen) with various micro-organisms. The animals were then taken and one in each pair had the wound simply washed with a ¾ per cent. sterilised salt solution at 37c., while the remaining rabbits had their wounds properly disinfected with a 3 per cent. lysol or carbolic acid solution. With the exception of one all died from progressive phlegmonous suppuration of those that had been simply washed with the saline solution; and of those that had been disinfected with the antiseptic all remained alive except one. This proved pretty conclusively that even after eighteen hours an infected wound may be treated and a successful result reckoned upon.

With regard to the question does a 3 per cent. carbolic acid solution lower the vital energy, rabbits were again

taken in pairs and a wound made in the thigh as before. In certain cases the wound was washed with a 3 per cent. solution of carbolic acid and covered with carbolic gauze for eighteen hours. The others were simply washed with the saline solution. All were then infected. The result was that all the animals whose wounds had been previously treated with the carbolic solution remained alive, and all those who were not, died, which result goes to show that rather than lower the vital energy of the tissues and predispose to suppuration, the carbolic acid solution, if applied within a reasonable time, sooner confers a certain protection against it.

The Antiseptics to use. Mr. Reeks said this must to a large extent be left to the choice of the surgeon. There are scores that we may use, with their advantages and disadvantages, for example: Carbolic acid, Perchloride of mercury, Boracic acid, Condy's fluid, Jeyes' fluid, Chloride of zinc, Sanitas, Izol., Tin. benzoine Co. Terebene, Sunlight, Salicylic acid, Oil of eucalyptus, Oil of cloves, Iodine, Iodoform, and a host of others. The speaker personally preferred to run on those which are most generally in use, carbolic acid and perchloride of mercury. A solution may be made in concentrated form according to Tuson's Pharmacopœia, in spiritus hydrargyei perchloride compositus, or what was better still, hydrargyei perchloridi ℥i, glycerine ℥vi, aqua ad, meth. sol. ℥xiiss. One ounce of the above solution mixed with half a gallon of water will form a one in a thousand solution of the perchloride of mercury, and from it any strength may be calculated. The study of these facts which have been gathered by careful workers in the fields of pathology and physiology, by painstaking investigators in bacteriology, and by the chemist, gives us that amount of knowledge which enables us to treat a wound not by any particular rule of thumb but with skilful attention and care which would be impossible without it.

In conclusion Mr. Reeks called attention to the hygienic conditions that so often surround the veterinary surgeon's patient. It was little short of madness to perform any serious operation or even to treat a simple wound with antiseptics amidst surroundings positively unsanitary and disease producing. It is for this reason that he would recommend that after dressing a wound in the ordinary manner the animal should be turned away to pasture, thereby cutting him adrift from any treatment whatever rather than leaving it to unskilful nurses and boxed up in the every-day loose-box hotbed of pathogenetic circumstances. By this he did not intend to deter anyone from following up a proper antiseptic treatment where possible, but merely to point out their duty to gradually lead their clients and those about them into the only right path in which they would be able to alleviate the sufferings of their patients, give satisfaction to their clients, and reflect credit on themselves, and this could only be done by sticking like leeches to the good old College motto, *Vis unita fortior.*

Discussion.

The President thanked Mr. Reeks for his very exhaustive paper, and invited any of the members to express their opinion upon it.

Mr. C. Hartley (Lincoln) in proposing a vote of thanks to the reader of the paper, thought that the whole of the ground had been covered and nothing had been left for anyone else to say. In the matter of antiseptics they had a large choice. He could remember when they used to use a mixture of lard, resin, etc. Personally he had used many of them. Izol, iodoform, carbolic acid, and others very successfully, but it was only of a strength of 1 in 2000, and he had had no objectionable smell that so many complained of. He thought if it was stronger than this when injected into the wound it would cause too much pain. He seldom used bandages after the wound had been sewn, for he considered that the less you covered it the better, and unless you had the animal in the infirmary the bandage was bound to be misplaced when you saw your patient the next time. If possible, when stitches were made, they should be about six to the inch.

Mr. Howse (Lincoln) in seconding the vote of thanks, said he had used many of the antiseptics with success. He thought bandaging was a failure unless you had a competent attendant to look after the patient.

The President had tried more than one of the antiseptics, and had known Sanitas to be very efficacious. If you used carbolic acid in every case your patients soon began to tell you of it. Thanks carried.

Mr. C. Hartley (Lincoln) then requested the opinion of the meeting as to whether vomiting invariably followed poisoning by arsenic, and a very interesting discussion followed, but the opinion seemed to be entertained that vomiting to an excessive degree did not always follow poisoning by arsenic, some of the speakers expressing a strong opinion of the men in charge of horses giving them large doses of arsenic, and it was suggested that the best remedy was milk in large quantities.

The members afterwards sat down to dinner. The usual loyal and patriotic toasts being duly honoured.

E. C. Russell, *Hon. Sec.*

THE NATIONAL VETERINARY ASSOCIATION

OBSERVATIONS ON TUBERCULIN AND MALLEIN.

By James King, M.R.C.V.S., Chief Veterinary Inspector, Manchester.

Discussion.

The President: I am sorry to say that I have received a telegram from Mr. King, expressing his regret at being unable to attend. Mr. Elphick, who was to have opened the discussion, is also unable to be present, and at very short notice my friend, Mr. Wolstenholme, has consented to act in his stead.

Mr. Wolstenholme: You know the short notice which I have had to open the discussion upon this paper and you will pardon all shortcomings in my effort. It will be almost unnecessary for me to make any remarks in comparing the knowledge we have of tuberculosis to-day and that we had twenty years ago. Twenty years ago, at the time I was a student, it was an accepted belief that the horse was immune to tuberculosis. The ravages which tuberculosis makes in the poultry yard were altogether unknown, and the large tumours which we used to find in horses were put down to another cause altogether than that to which we now attribute them. The chief factor in our knowledge to-day has arisen from the general recognition of all who have studied the question that the evidence is overwhelming that they are due to one particular bacillus. After that we have had the evolution of tuberculin, which, while it has not proved the curative agency which it was hoped and thought it might do, has given to the veterinary surgeon something by which he can test the animal, and in the course of a few hours he can know exactly, and almost absolutely whether that animal is or is not affected by tuberculosis. I need scarcely refer to the work which Prof. Nocard has done in demonstrating the actual connection there is between the ingestion of infected milk and the production of disease. I need not do more than refer in passing to Bang's work, which has also conclusively shown that tuberculosis is not hereditary, and by

proper arrangements may in time be stamped out. I do not know that I can criticise very well this particular paper of Mr. King's; it seems to me to be more a paper for the closet, and I have had to take my own line in introducing this subject, and it may not be the correct line. However, there is one other thing which I want to enforce, and that is the field which is now open to veterinary surgeons in connection with the Health Department of Corporations for the reduction of the death-rate from this particular cause. With respect to the injection of tuberculin, it is pretty well accepted that in some 95 per cent. of cases the reaction may be accepted. It was found early that sometimes there was no reaction when the tuberculosis was very generalised, and since the earlier experiments it has been found that, under certain conditions (that is to say, conditions of excitement, conditions which are found in connection with animals being knocked about at fairs and markets and sent distances by rail) although their temperature might be fairly normal when taken, yet there was some disarrangement, nervous or otherwise, which rendered the reaction to tuberculin not quite reliable. Now there is a point which we should have in mind with respect to the reaction which is sometimes got in these cases where there is only slight lesions. It has been proved over and over again where perhaps only one or two small lymphatic glands are infected we may have a marked reaction to tuberculin. This emphasises the need there is for men specially qualified to determine whether an animal is the subject of tuberculosis or not. It is not sufficient for a butcher to examine the carcase and say whether that animal is or is not tuberculous. Indeed, even a veterinary surgeon should have a special training, in my opinion, to cut down with facility and readiness on the various lymphatic glands, scattered as they are all over the body. There is noted on the continent the fraudulent use of tuberculin. This we should have in our minds when we are inoculating cattle to decide whether they are subjects of tuberculosis or not. It has been found, when an animal has been inoculated by tuberculin once or twice, that it will not react, and yet be the subject of tuberculosis. In pronouncing on tumours of the mammary gland it has been well brought out in the paper and has been alluded to by other writers on the subject that in addition to the general reaction there is a local reaction of the gland itself, redness, heat, and pain on pressure. Mr. King even refers to certain abdominal lymphatic glands being more or less inflamed on post-mortem, and certain areas surrounding the tubercles in the lungs having marked inflammatory lesions in connection with them, which he thinks—of course he cannot speak definitely—may be due, and are probably due, to the reaction of the part on the introduction of tuberculin. Every now and then we hear the word pseudo-tuberculosis, and I think we are going to hear more of that word. When first I heard of it it seemed to be simply confined to those more or less calcified areas which we find in the lungs of animals infested with parasites. Now the word pseudo-tuberculosis is being applied to certain lesions which we find in various animals—I do not think they have found any in the bovines yet other than what are due to the bacillus of tuberculosis. Some of the vegetable parasites are known to produce the same histological features as the bacillus of tuberculosis. This I hold is another reason for the employment of experts only in pronouncing on tuberculosis. I have exhausted the few notes I have had time to make, and I think I can only further say that with respect to Mr. King's paper I regret very much that its author is not present. It is a paper which is self-evident of work most carefully done. With regard to table No. I, I was connected with that investigation, and I know the facts are precisely stated. With respect to mallein it has been equally efficient with tuberculin, or even more so. A man who has had no experience in making post-mortems of glanders is not able to detect glanders even with the use of mallein. Sometimes we find the lesions are so very insignificant that unless a man had had previous experience and made a considerable number of post-mortems, he might overlook the minute congested areas in the lungs which precede the little nodules.

Mr. H. THOMPSON: I think we ought to be much obliged to Mr. Wolstenholme for opening the discussion on this paper, seeing Mr. Elphick has not turned up. I should have liked to have seen Mr. King, just to ask a few questions. No. 17 in Table I. is "White shorthorn cow. Not tested. Calved twin calves Feb. 6th, 1897. Viscera of calves examined by Professors Delépine and M'Fadyean, both proving tubercular." Perhaps Mr. Wolstenholme can inform me if those two calves were born dead.

Mr. HOLBURN: They were born alive.

Mr. THOMPSON: Were they very tuberculous when opened?

Mr. HOLBURN: Yes, every abdominal organ and gland was affected with tuberculosis; also the lungs.

Mr. THOMPSON: If these two cases were born tuberculous, was it hereditary or congenital, or in what way did they become infected?

Mr. WOLSTENHOLME: I saw these cases. It is known the uterus of the mother was affected with tuberculosis.

Mr. THOMPSON: Then it would be congenital. If that is the case, why should we accept the system that comes from the continent—breeding calves from diseased parents, rearing them, and making them healthy cattle? I have seen a few calves tubercular at birth, and my recommendation to people is to breed from healthy cattle, notwithstanding what is said on the continent. There is one portion of this paper which I am very pleased with—"One cow killed fifteen months after testing showed evidence of encapsulation of a number of what had been particularly active centres, and from their uniformity of appearance and consistence I think it not unlikely that the encapsulation might date from the time of the test." Now, gentleman, I tested six cows which did not want tuberculin to show whether they were tubercular or not because they were good clinical cases. Three of them had very bad diarrhœa and were in fact sinking. I merely tested them in order to test the tuberculin. The first time I inoculated them the temperation went up 4 or 5 degrees. About a week after they seemed to improve. I inoculated them again about three weeks after and the temperature only went up 2 or 3 degrees. They kept on improving. I inoculated them a third time,—no reaction. Those six cattle went on, made themselves fat, and were sold in the auction market and fetched good prices. They had no medicine whatever; they were inoculated with the tuberculin three times only. From what Mr. King says in his paper it seems the tuberculin has a curative affect. I am also pleased to note that Mr. Munro in a paper before the Lancashire Association a little while ago referred to the same thing—cow No. 3 he called it, where there seemed to be some healing up. I think if the tuberculin has this curative action it will rob tuberculosis of a great deal of its sting.

Mr. VILLAR: Like previous speakers I regret that Mr. King is not here, because I should have liked to congratulate him on the success of his paper and thank him for the labour which it has entailed. On page 65 he points out that he has found four results to follow the use of tuberculin. "I. Where no reaction followed the test and the animal was found free from the disease. II. Where there was a reaction to the test and corresponding disease found. III. Where there had been a reaction, but no tuberculosis could be found on post-mortem. IV. Where there was no reaction on testing, but post-mortem examination revealed tubercular

lesions." The first two results of course are entirely satisfactory, but the two latter would be most undesirable. I take it if they were arrived at except in a very low percentage of the animals tested, if such errors were at all numerous in practice, tuberculin would be of no practical value to us. I will now ask you to turn to page 70, where Mr. King begins to speak of the errors that he has met with. He first of all cites the case of No. 2 (bull) of No. I. table, and then he speaks of No. 3 (heifer) of table III Then he sums up the whole of his experiments by saying "out of about 200 cattle which I have tested before slaughter the following discrepancies occurred." You will see that there are 13 cases out of 200 in which the results shown by tuberculin have been wrong. That is 6½ per cent., a very high percentage, and what I wish to show is that by taking reasonable precautions and by examining this table we shall find the percentage of failures has been very much less than 6½ per cent. The first case which he alludes to is No. 8 in table I. You will see that is a black Kerry bull, and gave a reaction, inasmuch as it went as high as 103, but on the post-mortem examination, which is shown on the opposite page, you will observe it says (No. 8) " Lungs and bronchial glands slightly affected." I venture to think that that case at all events was a very successful one : in fact it occurs to me there must be a misprint somewhere. (Mr. Holburn tells me that there is a mistake somewhere). However, we will let that pass. I will go on to the next animal, No. 3 (heifer) of Table III. He says this animal gave a reaction, but no distinct evidence of tuberculosis could be found on post-mortem examination." Now if you will turn to page 61, in speaking of that very animal, he says, "In the case of No. 3 heifer, lymphatic glands, chiefly of the chest, were much enlarged, pale and soft. On microscopic examination no bacilli could be found in any of the specimens, but histologically prepared sections shewed dilation of the lymphatic spaces," and so on. I should like to ask you to entirely exclude this from the list of animals in which tuberculin is not reliable. It is within my own experience that in the lymphatic glands in which there is absolutely at the time of examination, no centre of tubercular infection visible, there is precisely the condition which he described here, that is, enlargement of the lymphatic glands. "The lymphatic glands were much enlarged, pale, and soft." That is entirely consistent the invasion of tubercular disease. Mr. King points out that in that particular microscopic examination no bacilli were found, but because no bacilli were found it is not evidence they did not exist. We all know it is a matter of great difficulty to find organisms in tubercular tissue : in fact, only two paragraphs above in speaking of diseased udders he says, "The udders of both cows were sent to Professor Delépine for examination. Tubercular deposits were evident on macroscopic examinations, and although the bacilli were not demonstrated by microscopic examination, they were proved by inoculation to be 'many' and 'abundant' respectively in the udders of the cows." I venture to think that if some portion of the lymphatic glands of this heifer No. 3 had been taken and inoculated into an experimental animal such as a guinea-pig, which is susceptible to tuberculosis, the animal would have developed tubercular disease. I think we must exclude that case from being one of failure. "Two bullocks tested at abattoirs behaved in a similar way. Each had 60 minim dose." That is not a case of failure of tuberculin, but of failure of the man who was sent out with the tuberculin. It is the man's error. He described the dose as very much too large later on in the paper—"Large doses should be avoided, from 35 to 45 minims will produce quite as good a reaction without undue systemic upset." Here these two bullocks suffered from the toxic effects of an overdose of tuberculin. Therefore I claim that those two cases may be excluded from the list of failures. "Three cows gave an apparent reaction, but on post-mortem no tuberculosis could be found. However, other reasons for rise of temperature, etc., were discovered. One had pneumonia, one acute pleurisy, and the other injuries of a painful nature." It seems to me that those mistakes may with ordinary care be avoided. To begin with, in testing an evidently diseased animal it is necessary, I take it, for the successful use of tuberculin that the temperature should be taken at least 24 hours preceding inoculation. If an animal suffering from pneumonia or acute pleurisy had its temperature taken 24 hours preceding we should find that animal was of an abnormal temperature. It must have been. Therefore I say the test in those two cases ought never to have been applied. Still more would I emphasise the third case, that is where an animal is suffering from a severe wound. That is the very thing that is likely to upset all our calculations. Personally I should never think of attempting to test with tuberculin an animal which had a large suppurating wound. But with the exception of the first animal I have endeavoured to show you these animals ought not to be included in the category of failures ; neither ought the five animals in No. 4 (page 71) :—"Five animals giving no reaction had calcareous nodules of tuberculous origin in the organs or glands." Calcareous nodules, mind you ! In this case I take it the tuberculin gave a most decisive and a most correct result. Calcareous nodules only were found, the animal recovered. It was not the subject of tuberculosis and the tuberculin injected gave no reaction. From personal experience I am able to assert positively that the percentage of errors is much less than 6½ per cent.

(To be continued.)

SOUTHERN COUNTIES VETERINARY MEDICAL ASSOCIATION.

A meeting was held at the Royal Hotel, Southampton, on Thursday, October 20th, when the President, E. W. Baker, of Wimborne, occupied the chair. There were also present : Messrs. J. F. Simpson, Maidenhead ; T. B. Goodall, Christchurch ; J. T. King, Bournemouth ; C. Carter, Guildford ; J. W. Barford, Brockenhurst ; and C. Pack, hon. sec., Lymington ; and as visitors : Messrs. J. A. Todd Worthing ; W. Hunting, London ; and P. J. Simpson.

The Hon. Sec. read the minutes of the last meeting which were duly confirmed.

Letters and telegrams regretting inability to be present were read from Messrs. Tutt, Winchester ; F. W. Wragg, Church Lane, Whitechapel ; Albert Wheatley, Reading; Fred Spencer, Basingstoke ; Martin, Rochester ; Parr, Salisbury ; and Dr. W. H. Fawcett, F.R.C.V.S., Wimborne.

The President announced that he had received letters of regret from two or three medical friends he had invited, as he thought the subject of the paper to be read was one on which they should have liked their opinion. (Hear, hear) Dr. William Ives, of Southampton, had just left his card regretting that he should be unable to complete his rounds in time to attend.

PRESIDENTIAL ADDRESS.

Gentlemen,—It is customary for a newly elected president to give a few remarks at the first meeting upon which he is called upon to preside, and as your selection has fallen upon me this year I presume to some extent I must carry out my duties.

Primarily allow me, again, to thank you for the

honour conferred upon me and to ask you to deal leniently with my shortcomings, which, I fear, will be numerous and conspicuous. I trust each member will do his best—not only during my year of office, but after it has expired—to further the interests of the Society, and in so doing produce results of benefit to the profession at large.

Some year or two since it was suggested that we should amalgamate with the Royal Counties V.M.A. in order to secure a better attendance, and, on that occasion, I expressed my belief that the interests of our own members would better be served by doing more for the Society to which we already belonged, and I asked each member in rotation to present a paper for discussion. This request has been acceded to by some, and I am sure will be followed by others. May I suggest that a means to secure this end would be to do the same as is done in at least one other society (the National). viz., draw up a list of subjects likely to prove interesting and instructive, and request some members to present papers thereon, and others to open the ensuing discussion. Failing this our time might be profitably spent in starting discussions upon pre-arranged subjects whether written papers were forthcoming or not. Some of us, at least, would gain information, and at the worst we should necessarily do better for the Society than by failing to call a meeting or worse still by failing to attend. None of us are so wise, I fear, that we cannot obtain some useful hints from our *confrères*, and most of us as we journey through our daily tasks pick up some points of value it is worth our while to communicate to others. Again, generally speaking, it is of advantage for us to bring forward interesting or uncommon cases upon which the views of others and our own experience may prove of mutual help. Presentation of more morbid specimens would also prove of interest, and last, but by no means least, the very rubbing together of shoulders has a tendency to broaden our views and brighten our lives. Gentlemen, may I ask you all, in these various directions, to help me during my year of office, and, in my own poor way, I will endeavour to shew my gratitude by furthering the interests of the Society so far as in my power I can.

During the last few years we have reason to be grateful for the strides made in the veterinary profession; the veterinary surgeon is slowly, perhaps, but no less certainly, making his power felt, and his position acknowledged. In the recent engagement in the Soudan we have seen the manner in which the services rendered by our fellow practitioners in the army have been valued and acknowledged by the Sirdar (now Lord Kitchener) for whom every member of the British Empire must entertain a truly high opinion, and whose words of praise, as a consequence, must of necessity carry more weight.

The passing of the Public Health (Scotland) Act has been attended with a recognition of the rights of the profession—satisfactory, in a measure, but none too easily obtained, and which I venture to believe will not prove entirely just until the law is similarly applied to the whole of Great Britain.

The honour of knighthood conferred upon Professor Brown, C.B., in the beginning of the year is a source of gratification to the whole body of veterinarians, but especially so to those who, like myself, have had the benefit of his tuition and guidance, and equally pleased must we be to note that in the distribution of the Jubilee medals our much respected President of the R.C.V.S. (Prof. Penberthy) was a worthy recipient.

I am, and I feel sure, gentlemen, you all are, pleased indeed to note in the matter of charity our own profession has not allowed itself to be in the background during the Diamond Jubilee, but has instituted an excellent fund—the Victoria Veterinary Benevolent—which will I hope, and believe, not prove antagonistic to the National Veterinary Benevolent and Mutual Defence Society. Personally I should like the old Society to join the new in the matter of Benevolence and remain on its old footing as regards the defence department, but I am not unmindful of the difficulties which lie in the way of securing this end.

The strides made in the diagnosis of tuberculosis and glanders are mainly due to the untiring efforts of members of our own profession, and we can but hope that their efforts will prove more permanently beneficial by the more liberal treatment of these diseases—as regards prevention and compensation—by Her Majesty's Government.

There is one subject I wish to mention before closing, viz., the International Congress of Veterinary surgeons which is to be held at Baden-Baden next year, of which the Secretary will give you full particulars. I should like the Society to forward a subscription and I say so for two reasons, viz., that in the first place I think it is our duty to further the interests of the Congress, and, secondly, in order that we may obtain copies of the publications, which will, most certainly, prove of interest to us all. If it could be arranged I should like to see the Society send a delegate, and, as our funds are not sufficient for the purpose, I have thought perhaps the members would be willing to give individual subscriptions to secure the delegate's expenses.

The annual meeting of the Royal Institute of Public Health which was held at Dublin between August 18th and 23rd under the presidency of Sir Charles Cameron, M.D., was attended by numerous members of the veterinary profession, and, as you are aware, the subjects introduced were varied, interesting, and instructive, whilst the excursions which were arranged by the local committee were enjoyable in the extreme. I was sorry that, as President of this Society, I could not make arrangements for its representation by a delegate, but I believe our funds are sufficient to enable us to give an annual subscription to the Institute in order to obtain certain privileges—amongst others a copy of the journal which is published annually and which contains a record of the proceedings.

In conclusion, gentlemen, let me express my deep gratitude to Mr. Pack for the pains he has taken in the past for the benefit of the Society, and especially for what he has done for the new President since his appointment; and also may I say how pleased, how truly pleased, I am to welcome you here to-day and how deeply I appreciate the honour I have received in being placed in the responsible position I now occupy.

Victoria Veterinary Benevolent Fund.

The Hon. Secretary read a letter from Mr. W. F. Barrett, in which he said he was instructed by his committee to ask him to bring the objects of the fund before the next meeting of the Association. The sum of £700 had been already subscribed, and as there were some members of the profession in urgent need of help, the committee hoped some of the members of the Association would aid them in that good work by contributing a donation or an annual subscription.

The President said if they were going to make the Association a success they ought to subscribe to the funds if only to a small extent. He thought they might contribute 10s. 6d. It seemed to him that they should as veterinary surgeons, independent of the Association, do something for the charity, especially when it so nearly affected themselves.

Mr. Goodall did not see that much good could be done with such a small capital as £700.

Mr. Hunting: It's not merely the capital fund. It's the annual subscriptions and donations.

The President said he should like the Association to support the fund, for during the year he occupied that

chair he wanted to be able to say that he had been the means of some good being done.

Mr. CARTER: I should think this Association might support the fund this year with half a guinea, and next year we might increase it. I propose that.

Mr. PACK: Then I will second it.

The motion was then put and carried unanimously.

THE CONFERENCE AT BADEN-BADEN.

The SECRETARY read a letter from Mr. Alexander C. Cope with reference to the Veterinary Congress in Baden-Baden to be held next year.

The PRESIDENT said it seemed to him that if they forwarded the 12s. entrance fee they would get a good return for their money in the form of the printed transactions, and such might form the nucleus of a small library for the Association.

Mr. SIMPSON proposed that the sum asked for be sent by their secretary.

Mr. KING seconded the proposal, and added to the motion that a delegate be nominated. It would not be absolutely necessary for him to attend, and he should like to name their President as the delegate. (Hear, hear.)

The motion was carried unanimously.

THE ROYAL INSTITUTE OF PUBLIC HEALTH.

The PRESIDENT said in the few remarks he made previously he suggested that the Association should become an annual subscriber to the Royal Institute of Public Health. The subscription was a guinea per annum, for which they would get the transactions at the Congress, and the printed proceedings of the Institute. He thought they would get good value for their money, and he proposed that a guinea be voted annually to the Institute, and that a delegate be appointed to attend the Conference.

Mr. HUNTING said the strongest arguments that could be advanced in favour of the proposal was that matters of Public Health were discussed every year, and as veterinary surgeons were hoping to get offices under the Public Health Act, such as inspectors of dairies and animals, he thought it was a good idea of the President's that the Association should subscribe. The more closely veterinary surgeons could associate themselves with these public sanitary bodies the better it would be for them. (Hear, hear.) Veterinary surgeons were lying by and rusting whilst sanitary officers were on the move, and getting appointments which they really ought to have.

Mr. KING said after what Mr. Hunting had said it behoved them as veterinary surgeons to keep themselves to the front. If they held back in regard to such matters they could hardly expect to get themselves recognised. By voting a sum of one guinea this year it did not bind the Association to do the same as long as it existed, and he would heartily second the President's proposal.

The motion was put and carried unanimously.

ARREARS OF SUBSCRIPTIONS.

Mr. KING enquired whether anything had been done in the matter of members arrears of subscriptions. He thought a foot note should be placed on the next agenda paper asking members to pay up their arrears without loss of time.

It was understood that this would be done.

FORTHCOMING PAPERS.

The PRESIDENT said he was anxious to have the proper number of meetings this year. A meeting was not called in June as it was impossible to get a paper read, neither could they get a delegate to attend the Congress of the Institute of Public Health in Dublin. Since then Professor Penberthy and Mr. Dollar had promised papers, and did any member object to a meeting being called between then and March, the time of the next regular meeting. ("No.")

BOVINE TUBERCULOSIS.—ITS PREVENTION.

By WILLIAM HUNTING, F.R.C.V.S.

To an audience of veterinary practitioners it is unnecessary to waste time by adducing evidence in support of the contagiousness of tuberculosis. We all know that the disease depends upon the existence, in the body of an affected animal, of a specific organism—a bacillus. We know too that a disease of this kind can arise from no other cause.

Years ago we used to be told, of pleuro-pneumonia and glanders, that some special condition of the animal was necessary for the appearance of the diseases. Now we are told, of tuberculosis, that some predisposition, some peculiar tendency of the individual animal, is a factor in its infection. Some cattle are supposed to be predisposed to the disease because they have been bred in and in, some because they have been excessive milkers, and some because of a fancied tendency due to their parents having been diseased. I do not believe there is sufficient evidence to support these theories. The strongest animals are infected, if only they have the misfortune to afford entrance to the bacilli in sufficient numbers. It is just possible that an odd bacillus or two may enter the system of an animal and succumb to the forces opposed to its development. But such cases of slight and single infections must be rare. That a few cases of tuberculosis do recover, and that many withstand the progress of the disease for years I admit, but they are exceptions to the rule. The healthiest animal affords all the requisites for tubercular infection and development, and clinical observation offers no evidence that a special condition of the system is necessary for either the origin or the progress of the disease, when once the bacilli have reached a resting place. All that I am prepared to admit is that, when once infected, a debilitated animal affords greater facilities for the rapid development and progress of the disease than does a strong and otherwise healthy one.

The methods of spread of a contagious disease are of primary importance to those who would frame preventive measures. All spread is of course by the passage of the causal organism from a diseased to a healthy animal. The spread of pleuro-pneumonia was peculiar in that it required co-habitation of diseased with healthy animals. When once you had cleared out an infected herd, there was no danger from again filling the shed or field with healthy cattle. The spread of tuberculosis is less simple than this. The causal organism which has escaped from diseased animals may remain for some time active and infective on the walls and stalls or on the feeding troughs of a building.

There are three ways by which the tubercle bacillus may enter the system of a healthy animal: inoculation, ingestion, and perhaps inhalation. Inoculation must be rare unless we include such cases as result from excoriation or puncture of the mouth and pharynx by food in which the bacillus may be lodged.

Ingestion we know is a common method of infection because direct experiment has demonstrated the certainty of its action, and because facilities for it occur in every diseased herd. A cough is the commonest of symptoms and the expulsive effort, when bacilli are leaving the lungs, distributes them over the walls and other parts of the building. Most effective of all, the cough sends infective sputum and mucus with half masticated food into the feeding troughs of neighbouring cows. This is by far the most common method of spread in my opinion.

Inhalation has the weight of authority in support of its danger. It is supposed to act by the dry bacillus floating about in the air and be ing drawn directly into the lungs during inspiration. Such

a method of infection is, I suppose, possible. A dried germ may remain actively infective. An occasional dried germ may float about in the air of a building. More rarely the dried germ may be drawn with the air into the respiratory passages of an animal. If it escapes detention by the wet passages of the nose, pharynx and trachea it may reach the bronchi. Even should it reach so far it may be carried back by the mucus which is always moving upwards from the lungs.

When we see the ease with which the freshly ejected bacillus can be swallowed, and the great difficulties which beset the dried organism in its progress. I cannot understand why it should be said that inhalation is a more common channel of infection than ingestion.

The practical importance of this matter lies in the fact that for one method we should pay special attention to ventilation—for the other we should guard against the swallowing of infected matter. The regulations insisted upon by local authorities under the Cowsheds, Dairies, and Milkshops Act clearly are based upon the greater danger of inhalation and they entirely ignore ingestion. They provide for continuous feeding troughs and so afford a perfect method of spreading disease by ingestion, if there is one animal from whose mouth infective matter is ejected. To overlook the immediate danger of spread by ingestion whilst devoting all one's attention to the more remote possibility of inhalation seems to me a grave mistake.

Housed cattle show a greater proportion of tuberculous disease than those kept in open fields. The explanation doubtless being that they are more exposed to infection. Dairy cows seem to be most largely affected and the reason of this is evident. It is not *per se* because they are housed, but because if once a case is admitted infection is constant. Take the case of a town cowshed in which the animals are kept solely for milking purposes. An infected animal is admitted, it infects others and so a continuous infection is established. The shed is never empty. As cows leave because they have ceased to give milk, or because they have been reduced to skeletons by tuberculosis, others are drafted in to fill their places. A proportion of the new comers are tuberculous, but even were they healthy the diseased animals remaining would soon infect them. Tubercular cows are infective for some time before the cow-keeper notices any definite disease, and so the spread is constant and certain, because diseased animals are always present. Were it not for the fact that the milking existence of a cow in a town dairy is short there would soon be no animal in the shed free from tuberculosis. Nearly all these cows go from the cowshed to the slaughter house, but a few return to the country to have another calf, and perhaps afterwards to reach another cowshed. In this way disease is carried from cowshed to farm and from farm to cowshed. It is little use letting air and light into sheds if constant living centres of infection are kept on the premises and frequently brought in from without. Cubic space and ventilation are excellent things, but they will not stop the spread of tuberculosis. For years we were told that light and air were the great necessities for controlling glanders in stables. Now we know they have little or no effect upon the spread of that disease. It is the diseased horse that is the danger. It is the undiscovered infective living animal that spreads glanders and so, I believe, it is with tuberculosis.

The general principles of prevention are two—to stop the emission of infective material from diseased animals, and to prevent its admission to the healthy. This requires the isolation or death of the diseased, and the protection of the healthy from such sources of infection as may be traced to food or buildings.

The existence of latent disease which gave no clinical indication of its existence until the animal had become infective was, before the discovery of tuberculin, an almost insuperable difficulty. Now we are able to detect the very earliest stage of the disease, and the stamping out of tuberculosis from a herd of cattle is practicable. The only question to answer is—is it worth while? What loss does tuberculosis inflict upon the breeder of stock, or upon the cowkeeper and butcher? The loss to the butcher and cowkeeper is very evident. When inspection, for the sake of human life, is made more thorough this loss will be even greater. The loss to the farmer from abortion, from death, and from wasting disease is considerable. The loss to the breeder of pedigree stock is more serious still, and now that foreign buyers are prevented by a tuberculin test from importing our diseased animals a very grave injury can be traced to tuberculosis.

I believe that the loss caused to the agriculturist is in itself sufficient to warrant a great effort being made to clear the country of the disease. But this is not all. The diseased animal may transmit the infection to human beings. The ingestion by man of tuberculous meat or milk is a real danger, and so we have a double reason for demanding legislative control of a disease which partakes of some of the evils of pleuro-pneumonia, and some of those of rabies—it is a cause of loss to the stock-owner and a danger to human life.

Legislation against pleuro-pneumonia was enforced for years at an annual cost of probably not less than £20,000. It was not much more injurious to stock owners than tuberculosis, and it was not dangerous to man. Swine fever costs £130,000 a year and is not dangerous to man, nor of half the consequence to stock-owners that tuberculosis is. It is a fair inference that if legislation is enacted against tuberculosis an expenditure of at least £20,000 a year might be justly demanded of the districts in which disease exists and from the Imperial exchequer.

That something should be done is acknowledged by everyone acquainted with the question. The difficulties are not insuperable, but they are magnified by those who want nothing done and also by those who desire to escape responsibility. Some stop short at anything more than voluntary effort. They argue that the stock-owner should treat disease among his animals as an ordinary trade risk and take means to prevent it at his own expense. There is some force in this, for it will certainly repay the stock-owner for his trouble and cost to make an effort to suppress tuberculosis among his cattle. But the easiest and most lucrative method of getting rid of tuberculosis is to detect the diseased animals by tuberculin and dispose of them in the market. This is easy, and there is no law to prevent it. If the individual profits by this voluntary effort the country does not, because disease is spread to other centres. Further, the voluntary efforts of careful men even when successful do not ensure them against future infection due to the carelessness of those who take no precautions. They have a right to ask that their healthy herds shall be protected against the contamination of diseased animals over which they have no control.

But tuberculosis is a danger to man and therefore cannot be left to the will and pleasure of the owner of diseased animals. The purity of milk and meat is as important as the purity of bread or water. If the law punishes a man for selling putrid meat or milk adulterated with water, it is just and right that it should punish the seller of meat and milk laden with the poisonous virus of tuberculosis. But there is this difference between the two offences. The owner of a diseased animal may have no knowledge of the danger; the seller of putrid meat or adulterated milk has clear evidence of their condition. The one should be punished, the other should be assisted before being punished.

Voluntary effort is insufficient for the protection of human life and even for the control of infection among cattle. What did voluntary effort do for cattle plague, pleuro-pneumonia, or foot-and-mouth disease? Nothing! If Government had postponed legislation on these

diseases until a general desire for compulsory control had been expressed we should have few cattle in the country now.

Another century may see stock-owners so well informed and so careful of their own and their neighbours interests as to render animal diseases Acts unnecessary, but is it wise to wait for this? Can we not, with economy, save the lives of many cattle and men by a little legal persuasion. Another century of bovine tuberculosis means millions of money and thousands of lives.

A timid advance on mere voluntary effort is the so-called Danish system, *i.e.*, the gratuitous supply of tuberculin and veterinary supervision of its use by Government. To call this a system of controlling tuberculosis is a dangerous and misleading error. It might be practised for a century without having any large effect upon our herds. It leaves untouched the very classes of men for whom all compulsory laws are made—the ignorant, the careless, and the negligent. The fact is Professor Bang has conducted in Denmark a very useful and successful experiment. He has demonstrated that at a comparatively small cost it is possible to suppress tuberculosis on a farm and he has established facts which prove that if such measures were made compulsory equal success might be obtained over a district. The success which has attended Professor Bang's "system" was not earned so easily as some authorities would have us believe. The separation of healthy from suspected animals detected, by tuberculin, on a farm means much trouble and expense. On small places it may be quite impossible. Professor Bang had farms arranged for him and money granted by the State. There are some millions of cattle in Denmark and so far as I can learn only some thousands of these have as yet been brought under the "system."

We are not altogether ignorant in Great Britain of the value of voluntary efforts but we have not been supplied with the bills of cost incurred by one or two rich men who have cleared their tuberculous studs of disease. We are able to compare "voluntary effort" with "compulsory regulations" in the case of a number of diseases. Voluntary effort was tried with cattle-plague, and if it had been continued we should have had few cattle left in the country. Voluntary effort was tried with pleuro-pneumonia, but it failed to protect the owner of stock against infection. Voluntary effort, with the aid of mallein has been tried with glanders, and enormous cost has been faced by many owners only to find fresh infection brought into their stables. One large company, whose success has been conspicuous and who by testing every new purchase keep the disease out, are now so sick of the continuous expence and trouble that they are discussing the advisability of again doing nothing. It is very disheartening for honest and careful men to adopt every means at their disposal only to find that careless and ignorant owners are allowed to do what they like in fostering and spreading disease to the danger and loss of their neighbours.

Liberty is altogether a good thing—voluntary effort is most praiseworthy Licence to cultivate and spread disease is altogether an evil thing, and voluntary effort has been tried and found wanting over and over again.

The most recent authoritative recommendation for the partial control of tuberculosis among animals in this country is the report issued by the last Royal Commission. It must not be forgotten that the object of this Commission was not to suggest measures for suppressing tuberculosis among animals, but only to enquire how the "dangers to man" from the animal infection could best be prevented. From this limited point of view the evidence taken compelled the Commission to confess that "all precautions against the communication of tubercular disease to human beings from the consumption of meat and milk of diseased animals must be regarded as temporary and uncertain palliatives so long as no attempt is made to reduce the disease among the animals themselves." If the Commission had had wider powers this sentence leaves no doubt that it would have suggested the necessity of direct action being taken by the Board of Agriculture. The report, limited to the danger to human life, advised a very strict inspection of meat and milk, compulsory notification of udder disease in cows, and a system of State-aided "voluntary" tuberculin test. These recommendations may be accepted as the irreducible minimum of action which in the opinion of the Commission would protect human life against an every-day danger.

The protection of human life from disease is not the direct work of veterinarians. That is the sphere occupied by the medical officer. But the inspection of meat and milk and diseased animals is so clearly veterinary work that we must accept the recommendations of the Commission as one step in an advance in which we must participate. Tuberculosis, as Mr. Long said at the Royal Veterinary College, affords us "a double object to work for"—the protection of human life and the salvation of our priceless herds of cattle. The first object would be greatly assisted by the adoption of the suggestions of the Royal Commission. The second object has still to be provided for, and it is our duty as veterinarians to do for the cattle what the medical profession is striving to do for the human subject. The necessity for some organised effort against the disease in animals has been officially recognised for years, but the difficulties in the way seem to frighten the authorities. In 1888 a Departmental Committee of the Privy Council reported that "In order to ensure the gradual extirpation of tuberculosis we are of opinion that it should be included in the Contagious Diseases (Animals) Acts, for the purposes of :—

(*a*) The slaughter of animals when found diseased on the owners' premises.

(*b*) The payment of compensation for the slaughter of such animals.

(*c*) The seizure and slaughter of diseased animals exposed in fairs, markets, etc., and during transit."

Strange to say the Committee reported against compulsory notification for the reason that the disease might exist and yet show no signs of its presence. This is a very curious apology for the exclusion of the most essential step in any regulations for the control of a contagious disease. The same excuse might have been made for non-notification of pleuro-pneumonia and glanders—and with just as little reason.

With the recommendations of the Departmental Committee and of the Royal Commission before us I propose to shortly show how the two objects desired may be attained by a combined attack of the medical and veterinary officers under compulsory regulations. I venture to suggest that without the combination, success cannot be attained with either object, and that what the Royal Commission called "temporary and uncertain palliatives" will only result in waste of time and money. Human beings must be protected by inspection of meat and milk and by the elimination of udder diseases from cowsheds. The danger to man and the cause of loss to stock-owners can only be successfully dealt with at its source. Every clinically diseased tuberculous animal must be subject to control.

If we examine the recommendations of the Royal Commission it will be seen how little would be attained by making them law which could not be better done by a mere Order of the Board of Agriculture, and how much would escape attention under the suggested legislation that would be provided for by the simpler and more effective Order. If a water pipe burst in a house and the occupier were to limit his efforts to sopping up the overflow instead of cutting off the supply most people would call him a fool. When a disease prevails among animals and threatens the health and life of human

beings, the authorities who limit their efforts to intercepting infection just as it stares man in the face are not wise. The place for effective interference is at the source—at the infected animal.

The recommendations of the Royal Commission are—

Inspection of meat.
Inspection of milk.
Inspection of milk cows.
Notification of udder diseases.
State aided use of tuberculin.

An Act of Parliament would be required to render these regulations operative. Probably two Acts would be necessary—one giving powers to the Local Government Board and one adding to the duties of the Board of Agriculture.

Inspection of meat is to some extent now provided for by Public Health Acts. If local authorities used the powers they possessed more fully very little further legislation would be necessary to protect human beings from the dangers due to tuberculous meat. The statistics derived from public abattoirs are of very little value as evidence of the prevalence of tuberculosis among cattle. The worst cases of disease never go into public abattoirs, but they do go into shops for the food of human beings. So long as private slaughter houses exist, so long will diseased meat be sold and consumed. The only thorough check upon this traffic is to make it an offence to move a tuberculous animal or carcase. This could be attained if tuberculosis were scheduled in the Animals Diseases Act It could not be attained by any system of inspection of meat until public abattoirs are erected in all large towns and every butcher's shop examined regularly by an expert.

Inspection of Milk. This is now provided for by regulations giving powers to local authorities. Under some local Acts milk containing or suspected of containing injurious materials or substances can be seized. By far the most constant, dangerous pollution of milk is by the tubercle bacillus. No law protects the public against this although the Cowsheds and Milkshops Order might easily be made to do so. This Order forbids the sale of milk from cows suffering from foot-and-mouth disease and pleuro-pneumonia because they are "diseases" scheduled in the Animals Diseases Act. Were tuberculosis scheduled—even for the slightest purpose—hardly any more powers for the protection of the public against tuberculous milk would be necessary.

Inspection of Milk Cows. At present some inspection, medical and veterinary, is provided, but if all the cows in the shed were found tuberculous no authorities save those in Glasgow could stop the sale of milk or order the isolation of the cows. Inspection of the cows by a veterinary surgeon and the detection of diseased animals would be useless without powers for their removal. Tuberculous udders are a gradual development, and infection of milk is possible from an amount of disease which may not be easily detected. To determine the real nature of a diseased udder might require the use of tuberculin to aid diagnosis and power to employ the agent should be given.

Seizure of cows, for the protection of the public seems to me unjust unless compensation is given the cowkeeper. A cowkeeper is constantly replenishing his stock, and he cannot avoid buying tuberculous animals. "Owing to the complicated nature of the cattle trade and the repeated sales that often take place between the time when the animal leaves the farm and arrives" at the cowshed, it is well-nigh impossible to place the blame on the right shoulders. Someone ought to be responsible, and I agree with Professor M'Fadyean that "If there is any loss it ought to fall on the breeder or feeder who owned the animal at the time when it contracted the disease."

The inspection of cows is most important, but unless it is made an offence to move a tuberculous cow over a highway it will not be difficult for a cowkeeper to evade the consequences of poisoning human beings by removing any cow from his shed as soon as she has a well marked tuberculous udder.

Notification of Udder Disease. The Royal Commission recognise the frightful danger of tuberculous udders in a cow-shed and suggest that compulsory notification of such conditions should be enforced. Why enforce notification of disease made evident by one symptom and leave all other cases of that disease outside of such a precautionary regulation? Surely notification of tuberculosis as a whole is as necessary and more logical than the limited notification of disease when it appears in the udder. A cow may be a confirmed "waster" suffering from generalised tuberculosis, and yet the udder remain unaffected. Is there no danger from such a cow in a place where milk is produced?

State aided use of Tuberculin. This recommendation has been spoken of as a "voluntary effort." It is nothing of the sort, because it would only come into use with strict conditions as to isolation and separation of the animals tested. On some places where space is plentiful this course is easily pursued. On some it is quite impossible unless the word "separation" is construed very freely and liberally. If tuberculin is the good taing we all acknowledge, why confine its use to those who ask for it. Why not empower the veterinary inspector to employ it whenever it is essential to his forming a positive diagnosis. It can do no harm, it may help to save loss to a stockowner, and health to human beings.

The whole of the recommendations of the Royal Commission are directed to the protection of human life. To carry them out very considerable trouble and loss will be inflicted upon butchers and cowkeepers. These two classes have expressed no desire for legislation, but the public good over-rides their desires, and the legislature will probably consider a sufficient case is made out by the Commission for interference. The butcher and cowkeeper buy stock for a specific purpose, and have no opportunity under the ordinary usages of trade for protecting themselves against the disease they are made to suffer for. The only person who has full opportunity to know the condition of the animal he sells is the breeder and feeder. On these men's premises the animals become diseased, and even if all the recommendations of the Commission are given the force of law, no regulations will strike at the source and origin of disease, and no penalties will fall upon the person most to blame—the person who can, if he will, know the state of the animal he sells.

The recommendations of the Commission are clearly insufficient to protect human beings against the transmission of tuberculosis from animals. By the time the most expert and most assiduous inspector has detected disease in the cow's udder milk may have been polluted, sold and consumed.

This touch and go sort of protection—sometimes effective, sometimes just too late—is to be carried out at great trouble and expense, whilst the logical and common-sense method of tackling disease at its source is left untouched.

Such folly surely will never be approved by Parliament and to assure its not gaining approval the veterinary profession should do its utmost to speak the truth.

The only way to protect the public is to control the disease among the animals. Whilst inspection of meat and milk and cowsheds and slaughter houses is being practiesd, regulations must be enforced against the existence of disease and its constant development on the premises of breeders and feeders.

Tuberculosis should be scheduled in the Animals Disease Act for the purposes of :—

Compulsory notification.
Isolation of suspected animals.
Slaughter of clinically diseased.
Regulation of movement of suspected and diseased.

The first effect of this action would be to enable medical officers to stop the sale of milk from tuberculous cows. It would also provide for the isolation of animals with tuberculous udders. It would gradually suppress the disease throughout our herds. It would be unjust to no one. The horse-owner has to submit to regulations on similar lines against glanders. What is applicable to diseased horses worth £50 each is surely not unjust when applied to cows worth £20.

I have attempted to show that the recommendations of the Royal Commission are insufficient for their one object, and that the double object of protecting both man and animals against tuberculosis can be attained with very little more action than that advised by the Commission. The Commission's recommendations partially control tuberculosis in the hands of cowkeepers and butchers. They leave the disease untouched in the herds of breeders and feeders. They protect the public at the expense of two classes, and give these classes no help or assistance against the persons who keep the disease alive and who evade by sale both loss and responsibility. I refrain from anticipating all the objections which may be taken but I am quite ready to reply to any. On one question I must however say a few words, viz., Compensation.

Since the days when cattle-plague was stamped out in this country the Government has recognised the principle of paying some compensation for the compulsory slaughter of animals. For thirty years our legislation against animal plagues has included compensation for all cases except where it can be shown, as in rabies, that the disease is incurable and the carcase of no pecuniary value.

Tuberculosis is now admitted to be a contagious disease and legislation is proposed for its control. That such legislation should include compulsory slaughter of diseased animals is recognised, and why compensation should not accompany it I fail to see. The Royal Commission was divided on the subject and by a majority of one reported against the payment of compensation to butchers. When milk is inspected for the good of the public, as meat now is, the cowkeeper will be liable to have his animals seized, and if the butcher has no compensation, doubtless the cowkeeper will also be denied all payment. It seems to me that in equity the butcher and cowkeeper should both be assisted in their loss by the public, and that when the breeder and feeder are controlled by regulations for the public good, compulsory slaughter of their stock should be accompanied by payment of liberal compensation. If legislation is based upon the wider basis of attacking disease whenever it exists, equal justice will be done to butcher, cowkeeper, and agriculturist.

If legislation is limited to the suggestions of the Royal Commission—suggestions directed entirely to protecting human health and life—the only owners of cattle who will be penalised are the butchers and cowkeepers. These two classes purchase their stock from breeders and feeders who, untrammelled by law, permit disease to exist and spread without fear of consequences. In the ordinary way of trade the butcher and cowkeeper cannot be sure that they are not buying diseased animals—the breeder and feeder can always know whether they are selling diseased or sound cattle.

If a law is made which, for the public good, submits butchers and cowkeepers to penalties of fine or imprisonment for owning tuberculous animals, common justice requires that some means of self protection should be afforded. Of course it may be said that they can protect themselves by insisting on a warranty being given, or they may recoup themselves by a system of mutual insurance. The warranty is practically impossible to get in the ordinary way of trade. The mutual insurance is of little use if the payments are made from a fund subscribed to only by butchers and cowkeepers. They would be recouped by themselves—they would pay out of one pocket what they lost from the other, and the seller of disease would escape. A mutual insurance, to be equitable, should come from a fund subscribed by breeders, feeders, cowkeepers, and butchers. This would be difficult to form, and so I suggest a simple plan which the law might enforce if partial legislation be adopted, and the cowkeeper and butcher alone made responsible for tuberculosis in cattle.

The butcher and cowkeeper only purchase animals for specific purposes—for the production of meat or milk. They are unable to test the animal for latent disease, but the man who sells has that opportunity. Let a clause be inserted in any new law giving an implied warranty of freedom from tuberculosis to any buyer of cattle for the purpose of meat or milk production. The warranty should extend for eight days from the time of purchase, and should only be effective when the reason for purchase was distinctly stated at the time of sale. Such a law would involve no new principle, but would be following closely the provisions of the Sale of Goods Act. It would be simply the usage which now obtains over nearly the whole of Europe. It would be equitable. It would simplify the financial problem which is one of the difficulties in legislating against tuberculosis. It would force the breeder and feeder of cattle from his inertia and oblige them to press the Board of Agriculture for assistance Every butcher and cowkeeper would become an automatic indicator of diseased herds on farms. Local Authorities would get rid of the troublesome question of compensating butchers, and would have disease brought to their notice instead of having it hidden from them. As an objection to the plan I have heard it said that this is unfair to the farmer, whose burdens are now greater than he can bear. All my sympathies are with the farmer in these days of foreign competition, but tuberculosis on a farm should be treated as have been other contagious diseases among stock—by regulations for control, and by liberal payment of compensation for enforced losses.

The State has not grudged money for stamping out pleuro-pneumonia or swine-fever. Public money has been freely spent to control disease not dangerous to human life, how much more freely should it be granted to stamp out a virulently dangerous disease like tuberculosis. The difficulties of administrative control of tuberculosis would be greatly lightened by eliminating all financial considerations of the butcher and cowkeeper, and the compulsory implied warranty would leave the question a very simple one.

What to do with tuberculosis in animals, for the double purpose of protecting human life and saving our herds of cattle, may be gathered from the reports of the Departmental Committee of 1888, and of the Royal Commission of 1898. They must be read together, and thus it is clear that the essentials are :

Inspection of meat and milk.
Compulsory notification of diseased animals.
Compulsory isolation of suspected or diseased animals.
Compulsory slaughter of clinically diseased.
Prohibition of movement of diseased animals or carcases.
Power to use tuberculin by Local Authorities.
Appointment of County Veterinary Officers.

ROYAL VETERINARY COLLEGE V.M.A.

The 258th ordinary general meeting was held on Friday, 28th October, at 6.30 p.m. Mr. G. H. Woolridge occupied the chair. There were present: Prof. M'Fadyean, Messrs. J. B. Walker, hon. sec.; H. A. Woodruff, H. W. Percy (visitors), and 49 members.

The minutes of the last meeting having been read and signed,

The HON. SECRETARY introduced a morbid specimen consisting of a dermoid cyst taken from the jugular furrow of an ox, and kindly sent for inspection by Mr. R. W. Hall, M.R.C.V.S., Barry Dock.

An essay entitled "The Mechanism of Bacterial Diseases" was then read by Mr. Crole, which showed the essayist to be possessed not only of a thorough grasp of his subject, but also of considerable literary ability.

The CHAIRMAN, in the name of the members, expressed the pleasure it gave him to see Prof. M'Fadyean amongst them.

Votes of thanks to the Essayist and Chairman terminated the proceedings.

J. M. TATE, *Assist. Sec.*

VICTORIA VETERINARY BENEVOLENT FUND

46, Lewisham High Road,
New Cross, S.E.
20th October, 1898.

Dear Sir,

Will you kindly announce additional subscriptions to above funds.

Amount previously published £699 17s. 9d.

	Donations. £ s. d.	Life Membership. £ s. d.	Subscriptions. £ s. d.
Huband, T. A.			1 1 0
Coe, J. W.	1 1 0		
Clarke, A. E., Vet.-Lieut.			0 10 6
Hyginson, J.	0 10 6		
Bell, J. H.	0 10 6		0 10 6
Knowles, R. W.	1 1 0		
Dickinson, W. G. B.			0 10 6
	3 3 0		2 12 6

Total: £705 13s. 3d.

W. F. BARRETT, *Hon. Sec. and Treas.*

EXTRACTS AND NOTES.

GLASGOW VETERINARY COLLEGE.

The session of the Glasgow Veterinary College was opened on afternoon, when an introductory address was delivered by Dr. J. Lindsay Steven. Bailie Dick, the convener of the Health Committee of the Corporation, presided, and he was supported by Principal M'Call, the professors of the College, and several other gentlemen. After a few words from the chairman, Dr. J. Lindsay Steven proceeded with his address. He said his subject was "The Prevention of Tuberculosis from the point of view of the veterinary surgeon and the medical man." At the outset he referred to the history of our knowledge of tuberculosis, and traced the steps by which our present position with regard to the pathology and prevention of it has been arrived at. He then went on to consider the important subject of the prevention of tuberculosis, and pointed out that it was a decidedly infectious disease, and that all measures with regard to prevention must proceed upon that understanding. Looking at the question from the veterinary surgeon's point of view, he considered the first step in prevention was the widespread use of Koch's tuberculin as a method of diagnosing disease in its early stage, because by its means they could recognise the disease before any of its prominent signs were visible. The next point was to show that meat from tubercular cattle and milk from tubercular cattle were dangerous to the community when used as food. If tuberculin was widely used the disease would be recognised in its early stages, and infected animals would thus early be eliminated. He further pointed out that tuberculin was now used in Denmark as a means of freeing the herds of cattle from tuberculosis. Prof. Bang, of Copenhagen, recommended the regular use of tuberculin, so that herds could be separated into healthy and infected, for it was found that the healthy herds were always increasing, and the unhealthy decreasing. Another preventive measure was to provide healthy byres and cowsheds. He pointed out that, with regard to compensation, the Royal Commission was divided by four to three against it, and on the whole he was with the majority, because he regarded tuberculosis as an ordinary trade risk, and thought that that trade risk would be greatly eliminated by the use of tuberculin. Dealing with the question of prevention from the medical man's point of view, he remarked that the first theory was notification of tuberculosis as an infectious disease. That, he considered, was not possible as a compulsory measure. Then there was isolation for preventing its spread among mankind. That resolved itself into the hospital treatment of consumption, but he did not believe that such hospital treatment could be regarded as curative. Indeed, the only way in which the hospital could be of use for consumptive people was to provide a place where advanced cases of the disease could be cared for. These were not cared for under present circumstances. The second way was to provide sanatoria in the country, where persons in the early stages of the disease could be sent to in order to get fresh air. The last method he touched on was that of popular instruction by means of leaflets and handbills sent out by the sanitary authority, by the disinfection of houses in which consumptive people had died, and by the training of inspectors to instruct people in the use of tuberculine, while the only way to stamp out the disease was by the united action of the veterinary and medical profession. At the close a hearty vote of thanks was awarded to Dr. Lindsay Steven for his address. Principal M'Call, in intimating the results of the examinations, said that his own bursary of £20, which was given to the student who had the highest aggregate marks in the first, second, and third professional examinations, had been won by Mr. William Watson, Pontypass, County Antrim. He added that in 1896 the same bursary was gained by Mr. Rennie, from Ayrshire, and in 1897 by Mr. Oliver, Birmingham, so that within the three years the three countries in the United Kingdom had been represented. (App.)

SWINE FEVER IN LINCOLNSHIRE.—The Holland (Lincolnshire) County Council Cattle Committee, at a meeting at Spalding, yesterday, decided to close all the markets in the Holland division, owing to an alarming outbreak of swine fever. A telegram conveying this decision was ordered to be despatched to the Board of Agriculture who, it was feared, would themselves close the markets unless the local authority did so.

A Muzzling Incident.

One day last week a favourite dog was run over in the street. The owner, a lady, anxious to know the nature of her pet's fatal injury, sent to the veterinary surgeon to know if he would perform a post-mortem. Mr. Sewell dispatched a lad to the lady's house to bring the dog. The lad was carrying the dog in his arms when he was stopped by a policeman. "Here, you," said the intelligent officer, "why haven't you got that dog muzzled?" The lad looked up in blank astonishment. "Muzzled!" he exclaimed. "Yes—you know what I mean. Here, just come along with me to the police station, and give your name and address to the inspector." The boy, tumbling to the humour of the situation, followed the policeman respectfully. At the station the inspector told the boy to put the dog down. The lad deposited the dog carefully upon the floor. "What's the matter with it?" said the inspector, "can't it stand up?" "No, sir," was the reply, "it's dead." The inspector turned furiously upon the crestfallen officer who had brought the case in, and the lad, with a smile of triumph on his face, picked up the poor little dead doggie and made the best of his way with it to Mr. Sewell's surgery. Unlike most good dog stories, this one is absolutely true.

ARMY VETERINARY DEPARTMENT.

Extract from *London Gazette*, dated, Nov. 1st.:—
The undermentioned Veterinary-Captains to be Vet.-Majors. Dated 20th Oct., 1898:—T. A. Killick, J. B. Savage.

Vet.-Major Joshua A. Nunn, F.R.C.V.S., C.I.E., D.S.O. Lincolns Inn, has passed the final examination of the Council of Legal Education, held at Gray's Inn, on October 11th, 12th, 13th, for the pass certificate, entitling him to be called to the Bar as a Barrister-at-law, after keeping the requisite number of terms.—*The Times*, Nov. 2nd.

OBITUARY.

H. M. Hancock, M.R.C.V.S., Uxbridge, Middlesex, Graduated Lond., May, 1849.

Robert McNair, M.R.C.V.S., Blairgowrie, Perthshire, Glas., April, 1884.

Septimus Frederick Willows, F.R.C.V.S., Cirencester, Lond., April 1871—1892.

Alfred Clifford Oliver, M.R.C.V.S., Worksop, Lond., May, 1895.

Richard Barker, M.R.C.V.S., Middlewich, Lond., March, 1882.

John Hixon Cooper, M.R.C.V.S., Dover, Lond., April, 1867.
[On the 14th inst., aged 52 years.]

Albert Edward Michell, M.R.C.V.S., St. Austell, Lond., July, 1882.

The late Mr. A. C. Oliver.

A note in our last issue mentioned the serious illness of Mr. Oliver. Although at that time general wishes for his recovery were entertained, the condition of the patient was so critical as to leave but slender grounds for hope, and as soon afterwards as the following morning (Oct. 15), about 11 o'clock, he passed away at his residence, Bridge Place, Worksop, after an illness of only three weeks' duration and at the early age of 29 years. Typhoid fever has been somewhat prevalent in the town of late, and Mr. Oliver contracted the disease, upon which pnuemonia supervened. He lay in a critical condition about a week, but despite the best attention of Dr. Crawford, and the tender nursing of a devoted sister, the end came. The deceased was a son of the late Mr. Joel Oliver, corn merchant and malster, late of Oakleigh, Worksop, and formerly of Endcliffe View, Kingsfield Road, Sheffield. He was articled with the late Mr. Martin, M.R.C.V.S., of Chesterfield, and opened a practice in Worksop, about four years ago. Being skilful in his profession, frank and agreeable of disposition, he made commendable headway in the town and district, where he was invariably respected and esteemed, and though his residence at Worksop had been comparatively short, it had sufficed to form a valuable business connection. To all human appearances, he had a promising career before before him, and the news of its untimely curtailment was received on all hands with expressions of deep regret. Mr. Oliver was unmarried, and lived with his sister, in addition to whom two of his brothers from Sheffield and Ranskill were with him during his illness. Other members of the family are in Australia. —The funeral took place at the family vault in Worksop Cemetery on Tuesday afternoon. In spite of the wretched weather, many of the townspeople followed.—*Retford Times.*

CORRESPONDENCE

"BOG SPAVIN."

Sir,

In justice to myself and in reply to several letters I have had regarding Principal McCall's paper at Manchester, I may say Prof. McCall up to the time he read his paper had never operated on a single case of "bog spavin" with my instrument or as suggested by me. The only case he had operated on was one of distension of the stifle joint, and only one case of bog spavin which had been operated on by my method, and that the Professor had seen, had been an unqualified success, and the animal has been winning prizes ever since, and it is now 18 months since the operation.

In my opinion "bog spavin" and distension of the stifle joints are two very dissimilar affections, the one being an excess of synovia without synovitis or lameness, and the other a distension of the capsule of the joint with excess of synovia usually accompanied with synovitis and lameness.

I consider that as the Principal has not yet operated for removal of bog spavin by my method the profession may have been misled by the report of his paper as read at Manchester. I only claim for the instrument and injection as pertaining to the removal of "bog spavin."

James G. Deans.

UNDERSELLING.

Dear Sir,

Upon reading Mr. Coleman's letter I immediately wrote to the "young veterinary surgeon" asking if the statements contained therein were correct. He absolutely denies their truth.

As he happens to be a friend of mine I should naturally be prepared to take his word as soon as that of Mr. Coleman, more particularly as the latter seems to be

somewhat annoyed over the loss of clients. I therefore suggest that Mr. Coleman probably was mistaken as to the items of the bill he mentions.—Yours etc.,

W. BURT, JUN.

Brighton, Oct. 22nd.

ANÆSTHESIA.

Dear Sir,

Referring to the letter on "Anæsthesia" by "One of the Rank and File" in your issue of September 24th, containing such an onslaught upon a young professor and his methods of anæsthetising the small animals, I feel it my duty as a former student, and one pretty well acquainted with his methods, to write a few lines in his defence.

Your correspondent evidently does not place much faith in the published accounts of the success which has attended his methods, since he states that "this is certainly the tallest account of its kind in Europe or America" If he will go as far as to say he does not *believe* the Professor, I would simply invite him to go and see for himself, for at Camden Town he may see several such cases treated almost any day, and were he to go his evidently ancient ideas would, I guarantee, be quickly modernised. To shew that the "scientific toy," which he chooses to term it, can be successfully used in the administration of chloroform to dogs or cats to produce anæsthesia, even in the hands of an amateur, I beg to submit the following list of cases treated by me whilst assistant to Messrs. Colin C. Baird & Son, of Edinburgh :

Date.	Animal.	Age.	Time in producing Anæsthesia.	Time under influence.	Operation.
1897			Min.	Min.	
Aug. 15	F. Terr.	2 yr.	3-0	20	On tail.
,, 20	Kitten	2 mo.	1-30	30	Ovariotomy.
,, 30	Sc. Terr.	5 yr.	4-55	20	Castration.
Sep. 10	Ir. Terr.	4 mo.	2-30	25	Ovariotomy.
Nov. 7	F. Poodle	3 yr.	3-0	15	Castration.
Dec. 12	Cat	2 yr.	2-20	28	Ovariotomy.
1898					Tumour,
Jan. 10	Sc. Terr.	5 yr.	4-0	20	Excision of.
Mar. 1	Bull Ter.	8 mo.	3-10	20	On ears.
May 3	Fox Ter.	1 yr.	2-50	20	On tail.
June 1	Cat	1 yr.	1-30	30	Ovariotomy.
July 4	Cat	2 yr.	2-50	40	Gastrotomy.
,, 12	Eng. Ter.	4 yr.	3-10	90	Amputating leg.

The only conclusion I can arrive at is that your correspondent can never have given a fair and intelligent trial to the methods, otherwise he would not fail to see the superiority of chloroform so administered in producing anæsthesia over ether and its administration by the cone of cardboard.

There is no necessity for me to write more at present for surely your readers will not attach much importance to the statements of one who, like a mollusc, does not care to come out of his shell, but hides himself under a *nom de plume*.

WM. J. WATT, M.R.C.V.S.

Dear Sir,

On perusing *The Veterinary Record* of the 24th September, I was surprised and astonished to find in an article on "Anæsthesia," some not very complimentary remarks directed against a "young professor" It is the privilege of age and experience, of which latter "One of the Rank and File" boasts, to encourage youth, and if encouragement is not possible at any rate to bring an unbiassed mind to bear on the subjects. Your correspondent fails to avail himself of this, and rather seeks to make unjust reflections upon a man who deserves the success which has attended his labours; and even if "One of the Rank and File" cannot appreciate them, let me say from observation that those acquainted with the facts do. The writer of the said article is evidently not a frequenter of the "Free Clinique" or he could not, with truth, make the assertion that chloroform is a dangerous anæsthetic for dogs.

When I say that the "young professor" has made great strides *re* the successful administration of chloroform to the lower animals (cats and dogs) I voice the opinion not only of one individual, but those of the last two years' graduates as openly expressed by them. Let me ask "One of the Rank and File" if he is unable to congratulate the "young professor" at any rate to be just —Yours sincerely,

A NEW RECRUIT.

SURGICAL TREATMENT OF NECROSIS OF THE PERFORANS.

Dear Sir,

I was somewhat surprised to read in a recent issue on 2nd column of p. 225, the following remarks made by Professor Macqueen in discussing Professor Williams' paper read at the National Veterinary Association. He says "with regard to the treatment, or possible treatment, of certain cases of gathered nails, he (Professor Williams) alluded to necrosis of the perforans tendon, and described two operations—one he called the complete, and a modification known as the incomplete—but he does not say that he himself performed those operations. Probably there is not a man in this room who has ever performed this operation for the relief or cure of a gathered nail. If there is I shall be glad to make his acquaintance. Furthermore, I should like to know what his results were, whether he managed to restore that horse to workable usefulness. The operation originated in the brain of some scientific *nobody* on the Continent. If you believe everything that comes from the Continent, through a translation, you will have a very busy time." The "Scientific nobodies" were Professors Bouley and Nocard and M. André de Fleurens. Surely Professor Macqueen will confess he was wrongly reported.

A LOVER OF TRUTH.

WHY PAY MORE?

The following is what appeared on a card given to a V.S. attending a large stud :

White Oils
6d. and 9d.
Per Bottle.

Embrocation
9d. and 1/-
Per Bottle.

The Tradesman's Horse Doctor.

Why pay a Gentleman Vet. when you can have your Horses properly attended to at half the price by

W. DAVIES,

22A ARMADALE ROAD, NORTH END ROAD, FULHAM.

This person seems to have been acting as a practitioner. A M.R.C.V.S. has a similar name.

PROFESSIONAL UNIONIST.

COMMUNICATIONS, BOOKS, AND PAPERS RECEIVED :—Messrs. E. P. Edwards, J. G. Deans, J. L. Perry. A. McCarmick, E. W. Hoare, J. M. Tate, J. D. Pottie. Major Nunn. "Candidate." "Nemo."

The Bath Daily Chronicle, *The Retford and Gainsborough Times*.